New Claims

1. Method for providing at least one phase-characterizing parameter for speech processing operable with hybrid speech coders and hybrid speech decoders, comprising:
   - obtaining characteristics of a preceding frame coded according to a waveform matching speech coding; said preceding frame according to said waveform matching speech coding being immediately preceding in time to a succeeding frame according to a parametric speech coding

   characterized by
   - deriving said at least one phase-characterizing parameter for processing said succeeding frame according to said parametric speech coding from said obtained characteristics;

   wherein said at least one phase-characterizing parameter is employable to prevent a misalignment of said frames.

2. Method according to claim 1, wherein said speech processing is a speech encoding operation.

3. Method according to claim 1, wherein said speech processing is a speech decoding operation.

4. Method according anyone of the preceding claims, wherein said step of obtaining characteristics of said preceding frame according to said waveform matching speech coding comprises:
   - determining positions of at least one pulse of said preceding frame according to said waveform matching speech coding; and
   - determining a position of a last pulse of said at least one pulse.

5. Method according to claim 4, wherein said at least one pulse is at least one pitch pulse.

6. Method according to claim 4 or claim 5, wherein said step of obtaining characteristics of said preceding frame according to a waveform matching speech coding comprises:
   - determining a pulse value from the distances between said at least two pulses.

7. Method according to claim 4 or claim 5, wherein said obtaining characteristics of said preceding frame according to a waveform matching speech coding comprises:
   - obtaining a pulse value from an antecedent frame.

8. Method according to claim 6 or claim 7, wherein said at least one phase-characterizing parameter is obtained from said position of said last pulse relative to a size of said preceding frame according to said waveform matching speech coding in relation to said pulse value.

9. Method according to anyone of the preceding claims, wherein said at least one phase-characterizing parameter is at least one phase value.

10. Method according to anyone of the claims 2 to 9, wherein said determining of said positions comprises:
- determining average energy values from said preceding frame according to said waveform matching speech coding and
- evaluating said average energy values in order to determine positions of at least one local maximal energy value and
- assigning said positions of said at least one local maximal energy value to said positions of said at least one pulse.

11. Method according to claim 10, wherein said determining said average energy values comprises the step of:
- employing a sliding average algorithm in order to determine said average energy values.

12. Method for detecting a transition misalignment in transition from a preceding frame according to a waveform matching speech coding to a succeeding frame according to a parametric speech coding, said preceding frame according to said waveform matching speech coding being immediately preceding in time to said succeeding frame according to said parametric speech coding, comprising:
- obtaining characteristics of said preceding frame according to said waveform matching speech coding,
- obtaining characteristics of said succeeding frame according to said parametric speech coding, and
- evaluating said obtained characteristics in order to detect said transition misalignment.

13. Method according to claim 12, wherein said obtaining characteristics of said preceding frame according to said waveform matching speech coding comprises:
- determining positions of at least one pulse from said preceding frame according to said waveform matching speech coding and
- determining a position of a last pulse of said at least one pulse,

and wherein said obtaining characteristics of said succeeding frame according to said parametric speech coding comprises:

- determining positions of at least one pulse from said succeedingframe according to said parametric speech coding and
- determining a position of a first pulse of said at least one pulse,

14. Method according to claim 13, wherein said pulses are pitch pulses.

15. Method according to claim 13 or claim 14, wherein said evaluating said obtained information comprises:

- determining a distance of said position of said last pulse and said position of said first pulse and
- comparing said distance with a pulse value.

16. Method according to claim 15, wherein said pulse is obtained by the step of:

- determining said pulse value from distances of said pulses included in said preceding frame according to said waveform matching speech coding.

17. Method according to claim 15, wherein said pulse is obtained by the step of:

- determining said pulse value from a phase contour of an antecedent frame according to said parametric speech coding.

18. Method according to anyone of the claims 12 to 17, wherein said determining of said positions comprises:

- determining average energy values from said frame and
- evaluating said average energy values in order to determine positions of at least one local maximal energy value and
- assigning said positions of said at least one local maximal energy value to said positions of said at least one pulse.

19. Software tool for speech processing, comprising program code portions for carrying out the operations of any one of claims 1 to 18, when said program is implemented in a computer program for executing on a computer, a user terminal or a network device.

20. Computer program for speech processing, comprising program code section for carrying out the operations of any one of claims 1 to 18, when said program is run on a computer, a user terminal or a network device.

21. Computer program product for speech processing, wherein said computer program product is comprising program code sections stored on a computer readable medium for carrying out the method of any one of claims 1 to 18, when said program product is run on a computer, a user terminal or network device.

22. Communication terminal device offering enhanced quality of transmitted speech data comprising a speech encoder including a parametric speech encoding unit, a waveform matching speech encoding unit, and a communication interface for communicating speech encoded data via a mobile communication network, wherein said speech encoder is able to operate the method for providing at least one phase-characterizing parameter for coding a succeeding frame according to a parametric speech coding according to anyone of the claims 1 to 11.

23. Communication terminal device offering enhanced quality of transmitted speech data comprising a speech decoder including a parametric speech decoding unit and a waveform matching speech decoding unit and a communication interface for communicating speech encoded data via a mobile communication network, wherein said speech decoder is able to operate the method for detecting a transition misalignment in transition from a preceding frame according to a waveform matching speech coding to a succeeding frame according to a parametric speech coding according to anyone of the claims 12 to 18.

24. Terminal device according to claim 23, said speech decoder being additionally able to operate the method for providing at least one phase-characterizing parameter for coding a succeeding frame according to a parametric speech coding according to anyone of the claims 1 to 11.

25. Network device offering enhanced quality of transmitted speech data comprising a communication interface for receiving encoded speech data and transmitting encoded speech data and an analyzing unit, said analyzing unit being able to operate the method for detecting a transition misalignment from a preceding frame according to a waveform matching speech coding to a succeeding frame according to a parametric speech coding according to anyone of the claims 12 to 18.

26. Network device according to claim 22, said analyzing unit being additionally able to operate the method for providing at least one phase-characterizing parameter for coding a succeeding frame according to a parametric speech coding according to anyone of the claims 1 to 11.

27. System offering enhanced quality of transmitted speech data comprising:
    - a first terminal comprising a speech encoder for encoding speech and a communication interface for transmitting encoded speech data,
    - a first terminal comprising a speech decoder for decoding said encoded speech data and a communication interface for receiving said encoded speech data,
    - an intermediate network device offering enhanced quality of transmitted speech data according the anyone of the claims 25 to 26.